

Patent Application of

Joseph D. Udy

for

MINUSCULE IMAGES OF ALPHANUMERIC SYMBOLS

Background-Field of Invention

This invention relates to switches and to the use of alphanumeric symbols on MicroElectroMechanical System, MEMS, mirrors.

Background-Prior Art

The use of binary switches and the resulting binary code have required that relatively long code strings be used to represent or transmit simple symbols.

Objects and Advantages

Alphanumeric symbols on the mirrors of MEMS switches allow the representation and/or transmission of symbol images with very short pulses of laser light.

No Drawings

Summary

Minuscule images, of alphanumeric symbols formed on MEMS mirrors, are created for use in optronic/photonic devices and systems.

Description

Nonreflective alphanumeric symbols are etched or formed onto the mirrors of MEMS switchs.

Operation

A light pulse reflected from a marked mirror would form an image of the symbol on that mirror. The light pulse image could be directed into an optical fiber for transmission. Projection of the light pulse image onto a CCD chip (or screen) would provide readout. Storage might be projection of the symbol image directly onto a CD (or with light stopping methods of Rowland Institute).

Conclusions, Ramifications and Scope

The limiting factor may be the number of photons necessary to form an image. Many paths toward that limit appear possible: for example, extremely small symbols, extremely short light pulses, multiple symbols on each mirror, lens systems, very high element number switchs; i.e. current MEMS switchs have 256 mirrors (possible symbols), frequency multiplexing; i.e. each frequency of the light pulse forming an image, and reflective symbols on a nonreflective background. Alternatively: symbols might be formed directly onto the exit mirrors of lasers such

that the laser pulse, itself, is the image; or images created by passing the light pulse through an image medium. Eventually, a image may be worth a thousand bits.